AEROJET ROCKETDYNE

7499 Pine Stake Road
Culpeper, Virginia 22701

Telephone: (540) 854-2037
Facsimile: (540) 854-2002

August 4, 2016

FedEx and Email

Ms. Angela Alonso
RCRA Permit Writer
VA Dept. of Environmental Quality
629 East Main Street
Richmond, VA 23219

Re: Request for Emergency Permit; Aerojet Rocketdyne, Inc.; Orange County Facility; EPA ID No. VAD981112618

Dear Ms. Alonso (Angela):

As a follow-up to our phone conversation today, I am submitting this letter and the attached information on behalf of Aerojet Rocketdyne, Inc.'s request for an emergency permit for its Orange County, Virginia facility, pursuant to 40 CFR 270.61 (and 9VAC-20-60). I will also complete the emergency permit form as soon as you send it to me by email, which I believe from our conversation, is consistent with the information provided in the attachment to this letter request, and will submit the required fee to process the permit.

The facility has a RCRA permit for thermal treatment of explosive (D003) hazardous wastes by open burning. As you are aware, on the morning of July 20, 2016, there was an unplanned ignition within the thermal treatment facility (TTF) during a planned hazardous waste treatment event. Aerojet Rocketdyne is at the stage of its emergency response and planning efforts that we would like to request an emergency permit to cover the planned treatment, storage, and disposal on an emergency basis to address the potential imminent hazards posed by the management of the remaining untreated explosive waste material by methods not covered by our current RCRA permit. We are seeking to minimize handling by first treating these materials where they are located within the TTF since the incident but potentially outside the treatment pans, with potential subsequent further treatment in a nearby area also not covered under the RCRA permit.

Please see the attachment that is intended to provide the information required in an application for an emergency permit and also support the public notice process (per 40 CFR Part 270.61; 9 VAC20-60-12 et seq.; and DEQ's Memorandum of May 13, 2010 – Emergency Permits/Guidance Summary). For additional information on the incident, also see the attached copy of the written incident report that is required to be submitted within 15 days of implementing a RCRA Contingency Plan in response to an incident involving hazardous waste.

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Thank you for your prompt processing of this letter request for an emergency permit. Should you have any questions or require any additional information, please contact me by phone at 540-854-2037 or by email at Tim.Holden@Rocket.com.

Sincerely,

AEROJET CORPORATION
Virginia Operations

Timothy E. Holden
Sr. Manager – Safety, Health and Environmental

ATT

cc:	L. Romanchik	DEQ – Central Office
	R. McAvoy	DEQ – Central Office
	A. Zimmerman	DEQ – NRO
	R. Doucette	DEQ – NRO
	L. Pizarro	EPA Region 3
	D. Rymph	Aerojet Rocketdyne
	B. Schwennesen	Aerojet Rocketdyne
	B. Wheatley	Aerojet Rocketdyne
	R. Payne	Aerojet Rocketdyne

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Request for Emergency Permit

Name and Address of the Permitted HWM Facility:

Mailing Address
Aerojet Rocketdyne, Inc.
Orange County Facility
7499 Pine Stake Road
Culpeper, VA 22701

Physical Address:
Aerojet Rocketdyne, Inc.
7499 Pine Stake Road
Rhoadesville, VA 22542

Brief Description of the Waste Involved:

Approximately 550 pounds of explosive waste remain untreated in the RCRA-permitted thermal treatment facility (TTF) following the unplanned ignition on the morning of July 20, 2016 involving explosive waste material already loaded into the steel treatment pans in that treatment unit (TTU #1) of the TTF. The remaining untreated explosive waste within TTU #1 of the TTF includes:

- Approximately 500 pounds of waste propellant, the majority of which is in three different open-top lever-pack containers within a 4-sided aluminum transport pan on the front of a forklift; that quantity also includes several individual small packages of waste propellant articles/items placed on the floor of the forklift pan. The forklift was abandoned at that location when the TTF operators evacuated the TTF area.
- Possibility of (difficult to determine if it was treated or not) 50 pounds of waste propellant ingredients in one of the four steel treatment pans (Pan #1) that appears to be covered by several inches of sand thrown from the adjacent pan in which the incident initiated.

Brief Description of the Emergency Actions Anticipated Under the Emergency Permit:

The emergency permit is being requested in order to conduct the necessary treatment, storage, and disposal on an emergency basis by methods not covered under our current RCRA permit in order to address the potential imminent hazards (including those posed by any handling) of the remaining untreated explosive waste resulting from the unplanned ignition event that occurred within TTU #1 of the TTF on the morning of July 20, 2016. Those emergency control measures to be conducted under this permit are planned to address the potential imminent threat to the safety of onsite emergency response personnel, and to minimize any potential threat to the environment within TTU #1 of the TTF area.

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Because of the relatively small quantities of explosive wastes involved in the incident (250 pounds compared to the 7,000 pounds that our RCRA treatment permit and air permit allow per treatment event), and the remote location of the TTF close to the center of the property, our assessment determined that there was no risk to human health or the environment outside the property boundaries of the Aerojet Rocketdyne (AR) facility.

However, there is an imminent risk posed to anyone involved in any further emergency response efforts to treat and dispose of the wastes in the TTF, particularly for handling this untreated explosive material that has been exposed to the natural elements since 7/20/16 in a manner required to transport/place these residual materials into the steel containment pans for treatment per the current RCRA permit requirements. There is also concern that any further significant rainfall events could cause the pan that may contain potential untreated waste propellant ingredients to overflow, hence the potential imminent threat to the local environment within TTU #1 and the TTF area. Note that much of the volume of the steel treatment pans is taken up by the sand used to insulate the pans from the heat generated during the treatment process.

At this time, Aerojet Rocketdyne is planning to implement a step-wise process that allows addressing under a RCRA emergency permit the remaining explosive wastes in the TTF located within the bermed area of thermal treatment unit #1 (TTU #1), in the approximate location and condition that they are in today, without incurring the imminent risk of extensively handling these waste materials that would otherwise be required in order to relocate them for treatment in the steel burn pans. The stepwise process is as follows:

1. Remove waste propellant articles/items from the forklift pan that can be safely moved, without disturbing other materials in the lever-packs, and which have attributes that make them good candidates for normal "cage burn" treatment similar to that performed under the current RCRA permit. The most notable of these items are small waste solid propellant motors that would normally be burned in a steel cage within a burn pan (and were headed to a cage in TTU #2 prior to the incident that halted TTF operations). These items are currently isolated in the bottom of the fork-lift pan and can be safely removed and transported to the burn cage area in TTU #2 without disturbing contents of the lever-packs.
2. Treat the remaining contents of the lever-packs in the general area of the fork-lift pan where they currently reside. These contents will be spread to the extent possible using remote methods (no personnel in area during this step), and burned within the bermed area of TTU #1 approximately 25 feet away from the treatment pans in which they would normally be treated. The lever-pack contents consist of the following:
    a. Waste solid propellant
    b. Waste solid propellant ingredients/materials
    c. Waste solid propellant loaded in metal or plastic forms or sub-assemblies (not complete assembly)
    d. Waste solid propellant ingredient/material packaging materials that may contain residue of a & b

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3. Treat the contents of TTU #1/Pan #1 under the assumption that some waste propellant ingredient/material is still present. Cover (protect from further rainfall) the pan with a car-port style temporary structure that does not contact the pan, and passively air-dry for a period to be determined (TBD) to reduce or eliminate water in the pan (note: waste material in pan (if present) is not soluble in water). One of two options will be exercised at this time pending interim lab testing.
   3a. Option one is to thermally treat the contents of Pan #1 in-order to minimize/eliminate residual waste propellant ingredients/materials. This to be performed in Pan #1 within TTU #1 using standard thermal treatment ignition aids and TTF burn starter materials such as diesel fuel, sawdust/wood chips, starter propellant, and initiators. Following the thermal treatment, the contents of Pan #1 to be remotely sampled and analyzed in multiple locations to determine if residual energetic waste materials still present. If "Yes", proceed to Option 3b. If "No", proceed to remove material from pan(s) and place into small buckets or shallow portable pans/trays, and transport to inert verification oven (IVO – a large propane-fired oven) for thermal treatment at elevated temperature exceeding the decomposition temperature for waste energetic materials ($\geq$ 600 degrees F), as redundant confirmation that all energetic waste materials are eliminated. Note: As this material is primarily sand, options for disposition of treated sand are to stage for reuse in the TTF pans or containerize, analyze, and ship offsite for appropriate disposal.
   3b. Option two involves adding inert (non-explosive/non-flammable) passivating/stabilizing liquid to Pan #1 in sufficient quantity to render the waste material into a low hazard, combustible slurry. This low hazard, combustible slurry (including sand and sawdust still present) can then be safely removed, placed in shallow portable pans/trays, and treated in a series of thin layer, small quantity, treatment burns in adjacent pans (Pans #2 and #4 within TTU #1). As in option 3a, the resulting contents from Pan #4 burns will be then be collected and processed by further thermal treatment via the IVO as a redundant assurance that all energetic materials have been eliminated, and dispositioned accordingly.

4. Following or in parallel with Step #3 as described above, treat and dispose of any untreated waste propellant or waste propellant ingredient/material on ground surface within the TTU. This will be closely supported by sampling and analysis as the process below proceeds.
   - After sampling and analysis to confirm extent of contamination on ground surface, remove surface layer of gravel, and as necessary any contaminated surface soils. If analysis shows trace levels or less of contamination, remove and treat surface soil and gravel in IVO as described in option 3a above. If analysis shows more than trace amounts in small areas around the burn pans, and depending on extent and type of contamination (TBD at this time), the surface areas will be collected and dealt with by one of several options:
     a. use shallow metal pans and sawdust/diesel mixture to open burn in steel containment pans followed by treatment in IVO.
     b. containerize, analyze, and ship off-site for appropriate disposal.

Notes to above planned emergency control steps:

- Emergency control steps to address imminent hazards are planned to be conducted remotely where feasible to do so, or to be conducted with strict safeguards in place.

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- Emergency control steps to address imminent hazards are to be conducted to approved written instructions and are to include a hazard analysis with mitigations/safeguards identified.
- Steps above to be supported by laboratory analysis as determined necessary.
- Several of the steps may be repeated as necessary until expected results are achieved.
- The TTF is planned for closure subsequent to issuance of a RCRA permit by VA-DEQ for container storage of explosive wastes for a period up to one year to facilitate packaging and offsite shipment for treatment/disposal. Because of that planned closure, Aerojet Rocketdyne may implement a limited cleanup of TTU #1 to address any imminent hazards to the environment, stop use of TTU #1 for further thermal treatment/open burning operations, and only operate TTUs ##2, #3, and/or #4 until closure of the entire TTF.

Duration of Emergency Actions:

The identified emergency steps outlined above are planned to be started no later than early next week. At this time we cannot accurately estimate the length of time it will require to safety conduct the planned emergency control measures outlined in the plan above. Therefore, Aerojet Rocketdyne is requesting that the emergency permit be issued for a 90-day period.

Once the emergency actions outlined above are completed and potential imminent hazards have been addressed, Aerojet Rocketdyne will then proceed to complete the assessment and cleanup of the affected area within the TTF as required under 40 CFR Part 264.56, Emergency Procedures, and as outlined in our RCRA Contingency Plan.

Holden, Tim

From: Holden, Tim
Sent: Thursday, August 04, 2016 5:33 PM
To: 'Alonso, Angela (DEQ)'
Cc: McAvoy, Russell (DEQ); Romanchik, Leslie (DEQ)
Subject: RE: Temporary Emergency Permit Application (Aerojet Rocketdyne VAD981112618)
Attachments: Aerojet Rocketdyne VAD981112618 Rqst for Emergency Permit 8-4-16.pdf; Aerojet Rocketdyne VAD981112618 Incident Report 8-4-16.pdf

Angela: Per our phone conversation this afternoon, attached is the letter request and supplemental information for the issuance of an emergency permit (also a copy of the written incident report submitted to EPA Region 3). I will complete the form that you provided and submit to you in the morning, and will try to get a check issued to you as soon as possible. I would hope you would not wait until receipt of the check to issue the permit, as we have had a long-standing relationship with VA-DEQ and have always promptly paid any and all permitting fees. Thanks for your prompt attention to this request for an emergency permit.

Tim Holden
Sr. Manager – Safety, Health & Environment

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From: Alonso, Angela (DEQ) [mailto:Angela.Alonso@deq.virginia.gov]
Sent: Thursday, August 04, 2016 4:54 PM
To: Holden, Tim
Cc: McAvoy, Russell (DEQ); Romanchik, Leslie (DEQ)
Subject: [EXTERNAL] Temporary Emergency Permit Application

Hi Tim,

Please find the Emergency Permit Application Form attached. Please fill-in the highlighted areas. The emergency permit fee is $2310. Once the emergency permit is issued, a public notice is also be placed in a local newspaper. (Note: A public notice authorization form would need to by signed by the applicant authorizing the cost of the public notice to be billed by the applicant).
You may contact me if you have questions.

Regards,
Angela Alonso
Hazardous Waste Permit Writer
Department of Environmental Quality
629 East Main Street, Richmond, VA 23219
(804) 698-4328
Angela.Alonso@deq.virginia.gov

Luis Pizarro
EPA Region 3
Philadelphia, PA